Memorandum

U.S.Department
of Transportation
Federal Aviation
Administration

Subject: Action: Instrument Approach Procedures, Survey Requirements

Date: 4/13/04

Reply to
Attn. of:

From: Program Manager, FTW FPO

To: FTW FPO, ASW RAPT

The following guidance in accordance with FAA Order 8260.3 paragraph 122a, AC 150/5300-13 Appendix 16 and FAA Order 8260.19 paragraph 271b will be applied within Southwest Region (ASW).

Removal of GPS overlays - New azimuth only (RNAV with LNAV only minimums), instument approach procedures (IAP) may be established to the same runway end with minimums equal to or higher than existing published minimums without additional survey requirements. Lower minimums may be achieved if a proper survey is submitted as described below.

New IAPs – New procedures require a survey as described below:

Survey Requirements:

Non precision instrument approach without vertical guidance - A standard instrument approach procedure in which no electronic glideslope is provided; e.g., VOR, TACAN, NDB, LOC, ASR, LDA, or SDF , RNAV with LNAV only minimums approaches: Survey requirement is ANP type or better.

Non precision approach procedure with vertical guidance, e.g., APV: LNAV/VNAV, LPV): Survey requirement is D type or better.

Precision Instrument Approach:

- CAT I: ANAPC type or better.
- CAT II/III: PIR type.

The attach WORD doc can be utilized to provide survey information for development of requested IAP/s. Surveys conducted in conjunction with an Airport Layout Plan (ALP) must specify the proper Part 77 surface and survey type to support the requested IAP. Runways currently classified as VFR must qualify as an instrument runway per FAAO 7400.2. Airport Design and TERPS standards listed in AC 150/5300-13 Appendix 16 must be met for new IAP's. These standards will be evaluated by FAA personnel. The airport management will be notified prior to IAP development if mitigation of these standards are required.

Charlie Kettler
Program Manager

Attachment

Cc: AVN-1, 100,120, 170E
FAA/ASW-600, ASW RAPT Members
TXDOT Aviation

INSTRUMENT APPROACH SURVEY DATA FORM
AIRPORT, RUNWAY, NAVAID & OBSTRUCTION DATA

GENERAL INFORMATION

Airport Name: _____ FAA Site Number: _____
City/State: _____ Airport ICAO: _____

PROJECT INFORMATION

AIP Project Number: _____
Project Summary: _____

SURVEY INFORMATION

All required survey data that is provided shall comply with the areas, obstruction identification surfaces (OISs), obstruction selection criteria, and accuracy requirements of FAA No. 405, "Standards for Aeronautical Surveys and Related Products" including Change 1, effective April 15, 1998, for the type of survey being performed as referenced in AC 150/5300-13, Airport Design, Change 7, Table A16-2, Survey Requirements for Instrument Approach Procedures. The survey data shall be tied to the National Spatial Reference System using established Primary Airport Control Station (PACS) and Secondary Airport Control Stations (SACS). Nearby NGS Continuously Operating Reference Stations (CORS) may be used if PACS and SACS have not been established at an airport.

NGS Control Station

Permanent Identifier (PID): _____
Date of Last Station Recovery: _____
Type of Control Station:

- ☐ Primary Airport Control Station (PACS)
- ☐ Secondary Airport Control Station (SACS)
- ☐ Nearest Continuously Operating Reference Station (CORS)

Horizontal control based on NAD83 DATUM is required.

Vertical control based on NAVD88 DATUM is required.

AIRPORT INFORMATION

Existing Airport Reference Point (ARP) Latitude: _____° _____' _____" N
(Resolution: 0.1 second) Longitude: _____° _____' _____" W

Revised Airport Reference Point (ARP): Latitude: _____° _____' _____" N
(Resolution: 0.1 second) Longitude: _____° _____' _____" W

RUNWAY INFORMATION

Runway Designation (Ref. Para. 7 of AC 150/5340-1H) RWY: _____ RWY: _____

Runway Geodetic Azimuth: (Resolution: .01 second) _____° _____°

Runway End Coordinates
(Resolution: .01 second)

RWY _____ Latitude: _____° _____' _____" N
Longitude: _____° _____' _____" W

RWY _____ Latitude: _____° _____' _____" N
Longitude: _____° _____' _____" W

Displaced Threshold (If applicable)

RWY _____ Latitude: _____° _____' _____" N
Longitude: _____° _____' _____" W

RWY _____ Latitude: _____° _____' _____" N
Longitude: _____° _____' _____" W

Runway Length _____
(Resolution: .01 foot. Threshold coordinates and runway length value must agree within one foot)

Runway Elevations
(Resolution: .01 foot)

	RWY _____	RWY: _____
THRESHOLD:	_____	_____
Displaced Threshold (If applicable):	_____	_____
Touchdown Zone:	_____	_____

CERTIFICATION

NOTE: The registered surveyor must certify that the information submitted herein complies with the areas, obstruction identification surfaces (OISs), obstruction selection criteria, and accuracy requirements of FAA No. 405 "Standard for Aeronautical Surveys and Related Products." The surveyor is not certifying that the information submitted constitutes a full FAA No. 405 survey. The surveyor shall apply their official seal to the completed form. The form shall be signed and dated in ink across the applied seal.

I hereby certify that the information provided herein has been compiled from field surveys conducted under my direct supervision and that said information complies with the areas, obstruction identification surfaces (OISs), obstruction selection criteria, and accuracy requirements of FAA No. 405, "Standards for Aeronautical Surveys and Related Products" (including Change 1, effective April 15, 1998) for the type of survey being performed.

Surveyor's Name: _____

Surveyor's License #: _____ **Affix Seal:**

NAVAID INFORMATION DATA

APPROACH (If NAVAIDs require surveying)	**RWY: _____**	**RWY: _____**
1. Localizer Information		
a. Geodetic Coordinates at Center of Antenna (Resolution: .01 seconds)		
Latitude:	_____ ° _____ ‘ _____ “	_____ ° _____ ‘ _____ “
Longitude:	_____ ° _____ ‘ _____ “	_____ ° _____ ‘ _____ “
b. Distance from Stop End of Runway to Center of Localizer Antenna. (Resolution: .01 foot)	_____ Ft.	_____ Ft.
c. Ground Elevation at Center of Antenna Array (Resolution: 0.1 foot)	_____ MSL	_____ MSL
d. Elevation of the Top of the Antenna Array (Resolution: 0.1 foot)	_____ MSL	_____ MSL
2. Glide Slope Information		
a. Geodetic Coordinates at Center of Antenna (Resolution: .01 seconds)		
Latitude:	_____ ° _____ ‘ _____ “	_____ ° _____ ‘ _____ “
Longitude:	_____ ° _____ ‘ _____ “	_____ ° _____ ‘ _____ “
b. Distance Along Runway Centerline from Approach End of runway to a point perpendicular to the center of Glide Slope Antenna Tower (Resolution: .01 Foot)	_____ Ft.	_____ Ft.
c. Distance from Centerline or runway to the Center of the Glide Slope Antenna Tower. (Resolution: .01 foot)	_____ Ft.	_____ Ft.
d. Ground Elevation at Center of Glide Slope Antenna Tower (Resolution: 0.1 foot)	_____ MSL	_____ MSL
e. Elevation of the Top of the Glide Slope Antenna Tower (Resolution: 0.1 foot)	_____ MSL	_____ MSL
f. Elevation of the Runway Centerline Abeam the Glide Slope Antenna Tower. (Resolution: 0.1 foot)	_____ MSL	_____ MSL

3. Middle Marker		
a. Geodetic Coordinates at Center of Antenna. (Resolution: .01 second)		
Latitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
Longitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
b. Distance Along Runway Centerline from Approach End of Runway to a point perpendicular to the Center of the Marker antenna tower (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.
c. Ground Elevation at Center of Marker antenna. (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.
4. Locator/Outer Marker		
a. Geodetic Coordinates at center of antenna (Resolution: .01 second)		
Latitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
Longitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
b. Distance Along Extended Runway Centerline from Approach End of Runway to the Center of Marker Antenna Tower. (Resolution 0.1 foot)	_____ Ft.	_____ Ft.
c. Ground Elevation at center of Marker Antenna Tower. (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.
5. Non-Directional Beacon (NDB)		
a. Geodetic Coordinates at Center of Antenna (Resolution: .01 second)		
Latitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
Longitude:	____ ° ____ ‘ ____ “	____ ° ____ ‘ ____ “
b. Distance Along Extended Runway Centerline from Approach End of Runway to the Center of Marker Antenna Tower. (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.
c. Perpendicular Distance from Runway Centerline to Center of NDB Antenna Tower (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.
d. Ground Elevation at Center of NDB Antenna Tower. (Resolution: 0.1 foot)	_____ Ft.	_____ Ft.

NOTE: If NAVAIDs survey data is required, the surveyor’s certification and seal would go here.

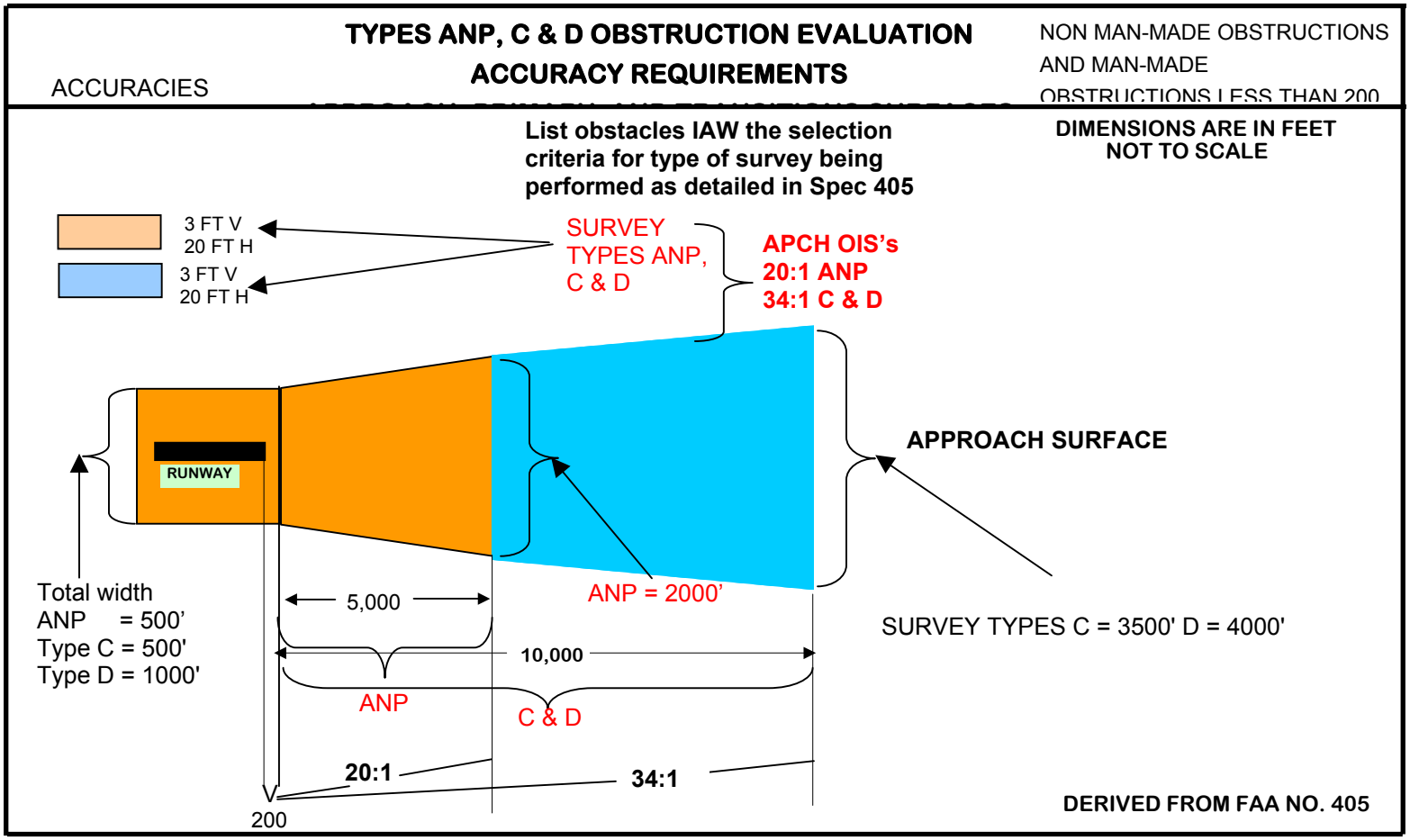
OBSTRUCTION DATA

GENERAL INFORMATION

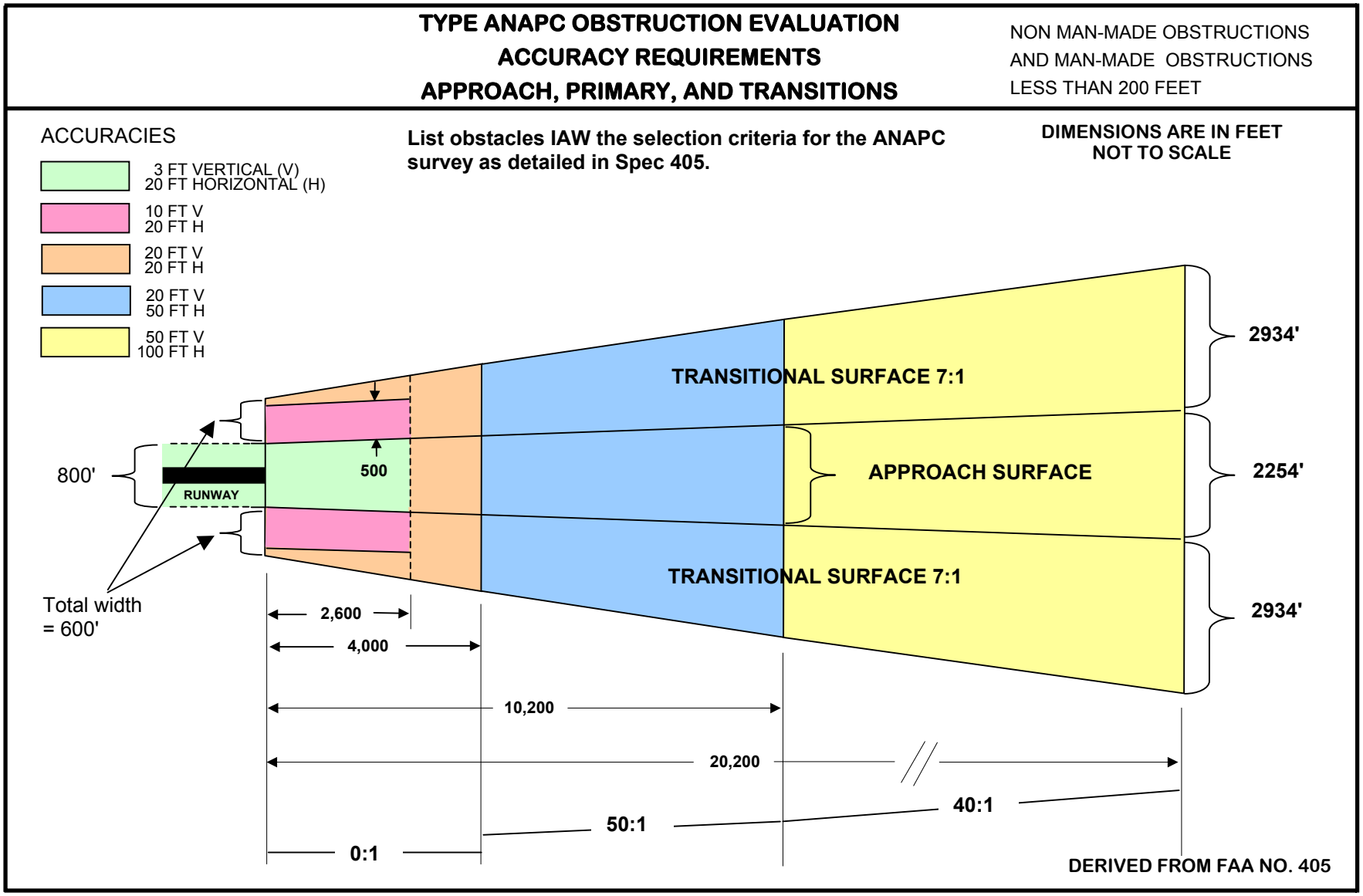
Airport Name: _____
City/State: _____
AIP Project #: _____
Project Summary: _____

FAA Site #: _____
Airport ICAO: _____
Type of Survey: _____

SURVEY INFORMATION : Survey types ANP or better will support a non-precision (LNAV only) procedure. Survey type D or better will support an approach with vertical guidance (APV) procedure (LNAV/VNAV or LPV).



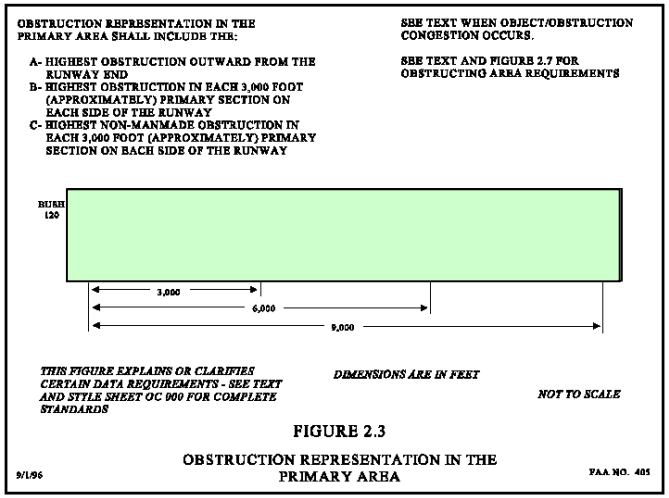
Survey type ANAPC will support Precision CAT I approach requirements.

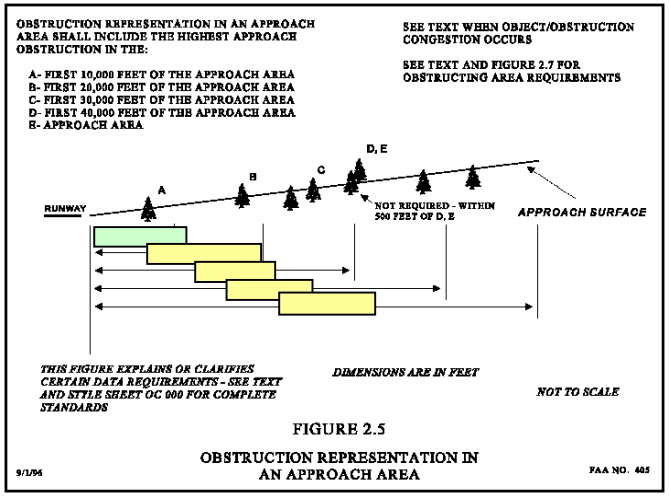


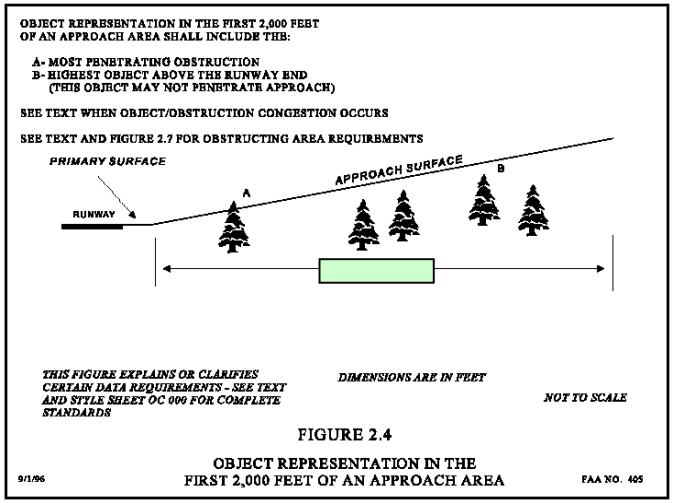
Survey type PIR will support Precision CAT I/II/III approach requirements.

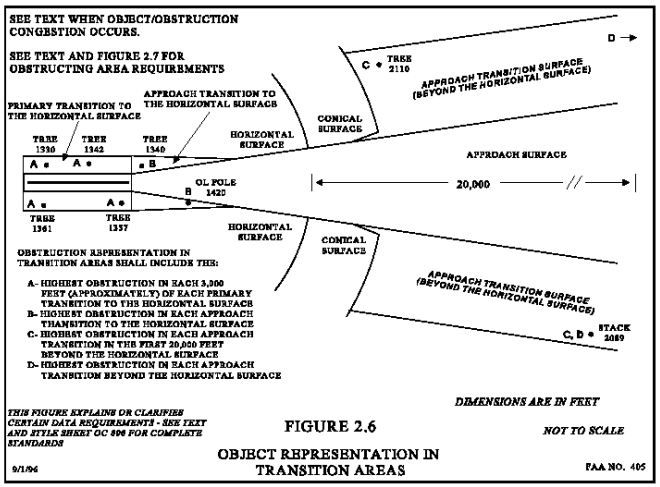
3 FT VERTICAL (V)
20 FT HORIZONTAL (H)

50 FT V
100 FT H









FIELD DESCRIPTION

Object = Object Name
Latitude = Geodetic Coordinates to an Resolution of two decimal places of a second, XX XX XX.XX
Longitude = Geodetic Coordinates to an Resolution of two decimal places of a second, XXX XX XX.XX
Accuracy = Accuracy Code Horizontal (H) = H20, H50; Vertical (V) = V3, V10
Elev. = Elevation (MSL) of the top of the object (reported to nearest foot)
HAR = Height above Runway Physical End (reported to nearest foot)
HAT = Height of object above Touchdown Zone Elevation (reported to nearest foot)
HAA = Height above Airport Elevation End (reported to nearest foot)
DEND = Distance Measured along the runway centerline or centerline extended from the runway physical end to a point abeam the object (reported to nearest foot). A negative distance indicates that the object is on the touchdown side of the runway approach end.
DCLN = Shortest distance from the runway centerline or centerline extended to the object. "L" (left) or "R" (right) is relative to an observer facing forward in a landing aircraft. (reported to nearest foot).
PNTR = Penetration value (reported to nearest foot) of the object above the applicable Obstacle Identification Surface (OIS) (20:1, 34:1, 50:1, etc)

RUNWAY: _____ / SURVEY TYPE: _____

OBJECT	LATITUDE	LONGITUDE	ACCURACY	ELEV.	HAR	HAT	HAA	DEND	DCLN	PNTR

RUNWAY: _____ / SURVEY TYPE: _____

OBJECT	LATITUDE	LONGITUDE	ACCURACY	ELEV.	HAR	HAT	HAA	DEND	DCLN	PNTR

RUNWAY: _____ / SURVEY TYPE: _____

OBJECT	LATITUDE	LONGITUDE	ACCURACY	ELEV.	HAR	HAT	HAA	DEND	DCLN	PNTR

RUNWAY: _____ / SURVEY TYPE: _____

OBJECT	LATITUDE	LONGITUDE	ACCURACY	ELEV.	HAR	HAT	HAA	DEND	DCLN	PNTR